REMARKS/ARGUMENTS

In the final Office action dated December 15, 2005, all of the pending claims were rejected under 35 U.S.C. § 103. By this Amendment, and the accompanying Request for Continued Examination, Applicant has amended claim 1. Reconsideration and reexamination are hereby requested for claims 1, 5, 8 - 11 and 44 that are pending in this application.

Claims 1, 5, 8 - 11 and 44 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Isono et al., U.S. Patent No. 5,259,044 (hereafter referred to as "Isono"), in view of Mekata et al., JP 3-145623 (hereafter referred to as "Mekata") and Parriaux et al., U.S. Patent No. 5,280,550 (hereafter referred to as "Parriaux"). Claim 1 is independent. Claims 5, 8 - 11 and 44 depend on claim 1.

Independent Claim 1

Amended claim 1 relates to an optical waveguide modulator equipped with an output light monitor including a combination of the following features:

Feature (1): The reinforcing capillary is formed from transparent glass, and provided with a hole formed therein for containing and holding the optical fiber for output light, a connection surface thereof connected to an output end side surface of the dielectric substrate of the optical waveguide element, and a terminal surface thereof opposite to the connection surface, the transparent reinforcing capillary being capable of receiving, on the connection surface thereof, the radiation mode light generated in the optical waveguide-connecting portion of the optical waveguide element and passed through the dielectric substrate and transmitting the received radiation mode light to the terminal surface therethrough.

Feature (2): The terminal surface of the reinforcing capillary is a light-reflective surface on which surface the radiation mode light is reflected toward the outside of the capillary.

Feature (3): The hole of the reinforcing capillary for holding the optical fiber for the output light is formed along the longitudinal axis of the transparent glass capillary; and the longitudinal axis of the hole intersects the light-reflective terminal surface at an oblique angle.

Feature (4): The monitoring light-receiving means is located in a position in which the monitoring light outputted from the reinforcing capillary to the outside of the capillary can be received, and is provided with a photoelectric conversion element.

In view of the above combination of features (1) to (4) with each other, the transparent reinforcing capillary may:

(i) receive, on the connection surface of the capillary, the radiation mode light generated in the optical waveguide-connecting portion of the optical waveguide element and passed through the dielectric substrate, as monitoring light.

(ii) transmit the received radiation mode light from the connection surface to the terminal light-reflective surface therethrough,

(iii) output reflected radiation mode light, as a monitoring light, toward the monitoring light-receiving means, and

(iv) stably hold the optical fiber connected to the output end of the optical waveguide element.

Accordingly, the optical waveguide modulator equipped with an output light monitor of claim 1 enables monitoring radiation mode light to be transmitted to a means for receiving the monitoring light in a relatively simple constitution thereof, while stably holding the optical fiber for output light connected to the output end of the optical waveguide.

Isano

Isano discloses a Mach-Zehnder optical modulator with a monitoring function of output light. In the optical modulator of Isano, a waveguide substrate has an output end face 10a formed to be oblique to the propagating direction of signal light output from the output side optical waveguide 16. Thus, a portion of the output light from the output side optical waveguide

is reflected on the output end face of the waveguide substrate and utilized as a monitor light. The monitor light is received by a photodetector 56 through a waveguide 54 for taking out monitor light.

In the optical modulator of Isono, the output end of optical waveguide element is not directly connected to an optical fiber for the output signal light. Thus there is no connection between an optical waveguide element and an optical fiber that is reinforced by a transparent glass reinforcing capillary.

Also, in the modulator of Isono, the monitor light is an artificially separated portion of the output signal light. The monitor light is not received radiation mode light that is generated in an optical waveguide-connecting portion of an optical waveguide and passed through the substrate.

Furthermore, the modulator of Isono does not receive radiation mode light as a monitoring light a claimed. The modulator of Isono has no structure for collecting radiation mode light as claimed and inputting collected radiation mode light into its photodetector.

Mekata

In Mekata radiation mode light is collected by an optical fiber 6 and led to a photodetector 12. The optical fiber 6 for the radiation mode light is supported, together with an optical fiber for the signal light output from the optical waveguide 4, by a holder 7 which is not connected to the optical waveguide.

The holder 7 of Mekata does not reinforce a connection of the optical fiber 5 to the output end of the optical waveguide 4. The holder 7 is separated from the output end of the optical waveguide. Moreover, the holder 7 does transmit the radiation mode light.

Accordingly, Mekata does not teach or suggest the specific reinforcing capillary of claim 1 which is connected to the output end of the optical waveguide element and that can hold the optical fiber for the output light connected to the output end of the optical waveguide.

Also, Mekata does not teach or suggest a reinforcing capillary that can receive radiation mode light on a connecting surface thereof and transmit the received radiation mode light from

the connecting surface to a light-reflective terminal surface and reflect the radiation mode light, as a monitoring light, toward monitoring light-receiving means.

Parriaux

Parriaux discloses a connector device for optical elements. The connector device 1 comprises a fiber support 5 having a groove 6 and a optoelectronic component 2 positioned adjacent to each other but not directly in contact with each other, as stated in column 3, lines 51 to 62, column 4, lines 40 to 42, claim 1, lines 23 to 24 (gap), claim 2, line 44 (gap), claim 4 (column 7, line 7 (gap)), claim 8 (column 8, line 10 (gap)). Accordingly, Parriaux does not teach or suggest connecting the fiber support 5 with the optoelectronic component 2.

Also, Parriaux provides no teaching or suggestion regarding an optical waveguide modulator, a reinforcing capillary connected to an output end of an optical waveguide element, and receiving radiation mode light as a monitoring light.

In summary, the cited references, considered either independently or in combination, do not teach or suggest the combination of features (1), (2), (3) and (4). Accordingly, Applicant submits that claim 1 is not obvious in view of the cited references. Claims 5, 8 - 11 and 44 that depend on claim 1 also are patentable over the cited references for the reasons set forth above. In addition, these dependent claims are patentable over the cited references for the additional limitations that these claims contain.

CONCLUSION

In view of the above amendments and remarks Applicant submits that the claims are patentably distinct over the cited references and that all the objections/rejections to the claims have been overcome. Reconsideration and reexamination of the above application is requested.

Respectfully submitted,

CHRISTIE, PARKER & HALE, LLP

By _____

Stephen D. Burbach
Reg. No. 40,285
626/795-9900

SDB/vsj

VSJ PAS686854.1-*-06/15/06 4:01 PM